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RESOURCES for MEDICAL RESEARCH

REPORT NO. 7 DECEMBER 1965

VOLUNTARY HEALTH AGENCY EXPENDITURES FOR RESEARCH AND RESEARCH TRAINING

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • PUBLIC HEALTH SERVICE

ACKNOWLEDGMENTS

The National Institutes of Health wishes to acknowledge the cooperation of the voluntary health agencies in providing the information on which this report is based. The generous assistance of National Health Council staff in the formative stages of the survey is gratefully appreciated.

The publication was prepared by Mrs. Narnie Borchardt, with the assistance of Mrs. Catherine M. Burns, of the Expenditures and Facilities Section, Joseph Rosenthal, Chief.

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Resources Analysis Branch, Office of Program Planning
U.S. National Institutes of Health,
Bethesda, Maryland 20014

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FOREWORD

This is the seventh in the series of onolyticol reviews focusing upon the Nation's resources—funds, personnel, focilities, ond institutions—devoted to medicol reseorch ond educotion. The role of voluntory health ogencies as octive porticipants in furthering national objectives in heolth reseorch ond troining is the subject of this report.

Voluntary heolth ogencies hove long been in the forefront in the drive to mitigote the misery ond suffering of diseose. Much of the recent progress in heolth core con be credited to health agency leodership, composed of outstanding professionols of the scientific world, working in portnership with concerned and dedicated laymen, ond deriving the funds for their octivities from the voluntory contributions of millions of our citizens. The voluntary health agencies pioneered in estoblishing progroms to render essentiol services to the sick, to further public ond professionol knowledge ond understonding of diseose conditions, ond to provide the impetus for on enlorged ond strengthened national effort to promote the heolth of the Notion through reseorch.

The heovy commitment of voluntory heolth agencies to reseorch is evidenced by their current ollotment of obout $1 out of every $3 disbursed in support of oll ogency progroms; in 1947 this ratio wos $1 out of $8. Almost 50 notionally orgonized voluntory heolth ogencies now provide funds to support the work of investigotion in the health sciences, to strengthen the resource copobilities of reseorch institutions, ond to brooden the educotionol possibilities for promising scientists. Since 1947 the numbers of organizations with reseorch progroms have more thon doubled.

In comparison with funds for medical and health-related research ond troining provided by Federal agencies and industry, the direct support rendered by voluntory heolth agencies is smoll. But the true goge of the heolth ogencies' ochievement is their impact on the evolution and direction of progroms in the heolth sciences. The flexibility of their organizations permits them to move quickly os needs orise to develop new lines of inquiry ond new mechonisms of support. And perhops the most significont contribution for o pluralistic society lies in their helping to keep open mony channels of support, thus ossuring the broodest possible development of progroms in the heolth sciences.

With the publication of this review, onother dimension hos been odded to the avoiloble informotion on the sources of funds for the support of medicol ond health-reloted reseorch. Subsequent issues of this series will delineote the porticipotion of industry, hospitols, and reseorch institutes in the drive to conquer disease and disobility through reseorch.

The ***Resources for Medical Research*** reports ore prepared under the direction of Herbert H. Rosenberg, Chief, Resources Anolysis Bronch, Office of Progrom Plonning.

JOSEPH S. MURTAUGH, Chief,
Office of Progrom Plonning, OD

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VOLUNTARY HEALTH AGENCY EXPENDITURES FOR RESEARCH AND RESEARCH TRAINING

INTRODUCTION

This publication continues the series of investigations and analyses—begun with the studies on the role of the Federal Government and of private philanthropic foundations [1]—of the diverse sources of support and patterns of leadership for medical and health-related research and training in the United States.

A continuing and strengthened pluralism in the sources of financial support for the conquest of disease and disability through research is assurance that programs may evolve on the broadest possible front to meet the health challenges of our changing society. Funding the Nation's health research effort—$1.9 billion in 1965—is shared by agencies of the Federal Government, State and local instrumentalities, philanthropic foundations, private industry, and a host of nonprofit organizations.

In this framework, the role of the voluntary health agencies is unique. They draw their strength and direction of purpose from millions of our citizens who volunteer their time and effort in furthering the stated objectives of their organizations, and from the voluntary contributions of millions of other citizens who have made the conscious choice to provide the funds necessary to achieve those objectives.

"Voluntary health and welfare agencies in the United States have been a principal means for raising the level of society's well-being by channeling into effective action the energies and good will of countless Americans—contributors, volunteers, officers, and staff members. The agencies have thus been in a position to provide needed services, develop and pioneer new methods, and make major contributions to the improvement of the health and welfare of the American people." [2]

As a group, the major contributions of the voluntary health agencies are threefold. They (1) make known through their public and professional education services what can be done to remedy particular health problems; (2) provide needed services to victims and their families; and (3) furnish impetus and resources in the search for new knowledge.

This report is principally concerned with the agencies' role in the support of medical and health-related research and research training.

SCOPE

In this study, a "voluntary health agency" is defined as a nonprofit association, composed of lay and professional persons, dedicated to the prevention or alleviation of a health problem, and dependent for most of its funds upon voluntary public donations. [3]

In all, 58 agencies were covered by a mail survey conducted by the National Institutes of Health. Fifty-one furnished information, including, with minor exceptions, all of the voluntary agencies with research interests which operate on a national scale. (See app. table 1 for a complete list of agencies.) [4]

The questionnaire requested detailed information for a current year—1963—and selected aggregates for benchmark years to delineate the evolving research role of voluntary health agencies in the postwar period. The agencies were also requested to provide some indication of their planning for future programs and their evaluation of their own effectiveness in furthering the Nation's effort in medical and health-related research.

This publication presents an analysis of the relationship of their research support to other aspects of their programs and to the total national effort in medical and health-related research. The types of research support provided—the proportions going to the support of research projects, to the strengthening of the research environment, and to the training of research manpower—are also examined.

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[1] See ***Resources for Medical Research*** reports 1, 2, 4, and 5, listed on the back cover of this publication.

[2] An exploratory study by an Ad Hoc Citizens Committee, ***Voluntary Health and Welfare Agencies in the United States,*** the Schoolmasters Press, New York, 1961, p. 1.

[3] Two agencies are included in the study even though their dedication to matters of health is only part of a broader welfare commitment: the American National Red Cross and the United Health Foundation. The latter agency makes no direct appeal to the public for funds but serves as the medical research arm of the United Fund movement.

[4] Three agencies in existence at the time of this survey, American Epilepsy Federation, National Epilepsy League, and United Epilepsy Association, Inc., merged in 1964 to form the Epilepsy Association of America.

HIGHLIGHTS

1. The American public contributed one-quarter billion dollars to 58 national voluntary health agencies in 1963. Funds made available to the agencies have increased annually during the postwar period, and in the first decade after the end of the war agency income increased more rapidly than the growth in national income. During the past few years, however, the reverse situation has prevailed—national income outpacing agency income.

2. In 1963 voluntary health agencies spent $44 million for research and another $4 million for the training of research personnel. For the typical agency, such expenditures accounted for 30 percent of total program outlays, compared with 12 percent in 1947. A continued and increased commitment to research is anticipated for 1964.

3. Of the 58 national voluntary health agencies, 6 organizations with incomes in excess of $20 million each, accounted for two-thirds of the total income in 1963. Two-thirds of the research and research training expenditures were concentrated in three agencies, American Cancer, American Heart, and National Foundation, but there were six other agencies each having research and research training programs of $1 million or more.

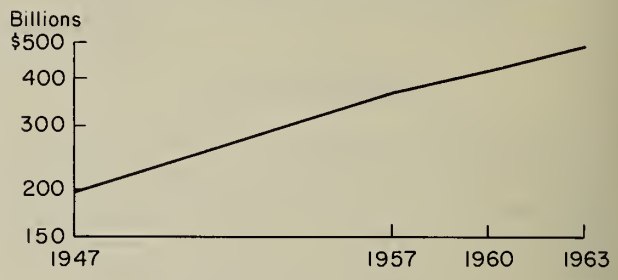
4. The research support provided by voluntary health agencies was predominantly in the form of grants to support investigations or strengthen the research environment at nonprofit organizations. Research activities carried on directly by staff of the voluntary agencies, including the holding of conferences and issuing of research publications, accounted for only 8 percent of the research expenditures. Of agency funds granted to others, the underwriting of specific research projects, long the dominant method of support, absorbed 69 percent in 1963; building-and-equipment grants accounted for another 14 percent while grants in support of the general operating expenses of research institutions and in general support of scientists accounted for 11 percent and 6 percent, respectively.

5. Educational institutions, the principal locale of voluntary health agency supported research, received more than one-half of all research expenditures in 1963. Nonprofit research institutes, which have grown in importance in recent years, received one-fifth with the remainder going to hospitals and other agencies.

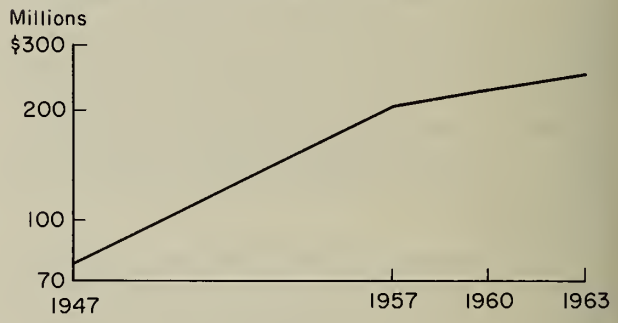
CHART 1

Trends in Income and Research Expenditures, 1947–63

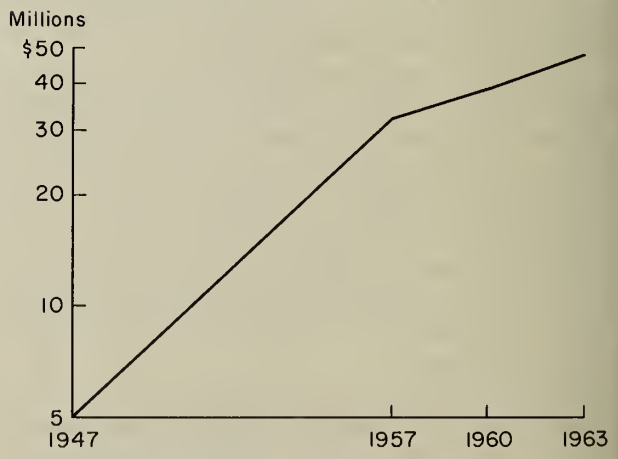
The postwar growth in NATIONAL INCOME...



was more than matched by VOLUNTARY HEALTH AGENCY INCOME in the first decade; but not after 1960.



Voluntary health agency support of RESEARCH AND RESEARCH TRAINING continues to grow faster than agency income.



SOURCES: Department of Commerce; National Institutes of Health

6. Of almost $4 million devoted to the training of manpower for research in 1963, three-fourths supported postdoctoral fellowships for approximately 400 scientists. Almost one-tenth was spent for the training of some 300 students below the doctoral level, while the remainder was divided among recruitment activities, special educational programs, and general support of research training institutions.

7. While there has been a gradual increase in the number of agencies supporting research training and in the proportion of their research support dollar which goes to the training of manpower, in 1963 only 17 out of 45 agencies supporting research reported expenditures for manpower training. These 17 spent, on the average, $1 for research training for every $10 they spent on the performance of research and the strengthening of the research environment.

8. While the life sciences have always absorbed the major part of voluntary health agency support—90 percent in 1963—and will doubtless continue to do so, there are some indications that investigations in the social or behavioral sciences will be of increasing importance and in the future may exceed the 6 percent allotted to them in 1963.

9. At the beginning of the postwar period, cancer and the severely crippling diseases were the targets of nearly all the voluntary health agency research support. The range of support has broadened as the total support has grown, with approximately one-third of the research effort now aimed at the control of cancer, almost another third toward the combating of neurological and other crippling afflictions, and a fifth against cardiovascular diseases. Less than one-sixth of the support went for research with respect to infectious and metabolic diseases and mental and social health.

HISTORICAL BACKGROUND

Heavy involvement of voluntary health agencies in the actual support of research dates only to the mid-1940's. Prior to World War II, most agencies then in existence followed the lead of the first voluntary health agency to be organized on a national basis, the National Tuberculosis Association.[5] This organization was founded in 1904 primarily as the result of the efforts of a crusading physician, Dr. Lawrence Flick, who was outraged that, despite Koch's isolation of the tubercle bacillus decades before, the infectious nature of tuberculosis was often ignored and ancient superstitions still surrounded the disease. The practical application of the latest scientific knowledge occupied the attention of this agency and others formed soon after.[6] Most of their efforts were devoted to public and professional education and to providing services to victims of disease. The support given to research was mostly the influencing of others, rather than directly promoting research programs of their own.

In 1938, with the establishment of the National Foundation for Infantile Paralysis (now known as The National Foundation), there appeared for the first time an organization with a wide public appeal dedicated not only to the traditional functions of education and service but to a vigorous program of sponsoring research. In its first 2 years, its research disbursements were almost a quarter of a million dollars and accounted for 85 percent of its total program expenditures. By 1947 annual disbursements for research exceeded $1 million. In the mid-forties, the American Cancer Society began to base its fund-raising drives on the promise of a major research program. Between 1944 and 1946, income of this agency increased tenfold, and the support for research exceeded an annual disbursement of $1 million. In 1946, the American Heart Association began to be transformed from a professional society, made up of a handful of cardiologists, to a voluntary health agency drawing on widespread public support and able before the end of the decade to allocate more than $1 million of its annual budget to research purposes. During the first 5 years after the end of the war, 10 other health organizations came into existence which based their public appeal, at least in part, on a promise of strong research support.[7] Two of these (Damon Runyon Memorial Fund and the National

[5] Carter, Richard, *The Gentle Legions,* Doubleday, New York, 1961, pp. 63–90.

[6] Notable among the earliest agencies were the National Society for the Prevention of Blindness (1908), National Committee for Mental Hygiene, predecessor of the National Association for Mental Health (1909), American Cancer Society (1913), American Social Health Association (1914), Maternity Center Association (1918), American Hearing Society (1919), American Foundation for the Blind (1921), National Society for Crippled Children and Adults (1921), Planned Parenthood (1922), and Seeing Eye (1929). The Leonard Wood Memorial for the Eradication of Leprosy, organized in 1928, was an exceptional organization for this period in having a strong research interest.

[7] National Multiple Sclerosis Society (1946), Damon Runyon Memorial Fund (1946), National Council To Combat Blindness (1946), Arthritis Foundation (1948), National Hemophilia Foundation (1948), National Paraplegia Foundation, Inc. (1948), United Cerebral Palsy Association, Inc. (1948), Leukemia Society (1949), Muscular Dystrophy Association of America, Inc. (1950), National Kidney Foundation (1950).

Council To Combat Blindness) were organized with the furthering of research as their exclusive concern. Later, with the appearance on the national scene of still other associations with strong commitments to research support [8] and with increased research interests on the part of the older organizations, the direct involvement of the voluntary health agency movement with the Nation's research effort became well established.

Bearing witness to the significance of this involvement are such major medical accomplishments as the polio vaccines and the PKU test against a severe form of mental retardation, which were outgrowths of research originally financed by voluntary health agencies. Also important are the contributions these agencies have made in the development of different types of mechanisms for the support of research. Their experience with moving from traditional project-type support to program grants and career research awards has provided models for others to follow, including the Federal Government. Their close involvement with the scientific world as supporters of research has also strengthened their traditional role in the transmission of research findings. Significant reductions in recent years in cervical cancer deaths and in the incidence of rheumatic heart disease can largely be attributed to highly skilled and informed campaigns conducted by voluntary health agencies in urging the public to make use of research discoveries (in the first case, the use of the Papanicolaou test and in the second, prophylaxis against recurring streptococcal infections).

ANALYSIS

Voluntary Health Agency Income

Since World War II, voluntary agencies organized on a national scale to combat health problems have more than doubled in number and their income has increased more than threefold—a testament to the continued interest and conviction of the American public in the programs of the voluntary health agencies. In 1947 there were some two dozen agencies with a total income of less than $80 million; by 1963, there were 58 national health agencies to which the public contributed slightly more than a quarter billion dollars (table 1).

During the first decade after the war the growth in income of all voluntary health agencies more than kept pace with national income, the latter growing at an average annual rate of 6.3 percent between 1947 and 1957, while voluntary health agency income increased at an average rate of 10.4 percent during the same period (chart 1). After 1957, however, a somewhat different pattern emerges. The resounding success of The National Foundation in bringing infantile paralysis under control paradoxically reduced the flow of funds to that agency. Contributions to the other agencies as a group continued to increase but not at a sufficient rate to counterbalance the decline in income of The National Foundation. As a result, the overall growth pattern of voluntary health agency income has in recent years lagged behind the growth of national income. Between 1960 and 1963 voluntary health agency income rose at an avearge annual rate of 3.2 percent while national income rose at an average rate of 4.9 percent.

Throughout the entire postwar period, despite the entry of many new agencies into the field, the distribution of income among agencies classified according to size remained fairly constant. In 1947, more than four-fifths of the income was concentrated in four agencies: the American Cancer Society, The National Foundation, the National Tuberculosis Association, and in that part of the American National Red Cross program deemed analogous to that of the typical voluntary health agency. In 1963, when the number of agencies on the national scene had more than doubled, these four were joined by four others (American Heart Association, National Society for Crippled Children and Adults, National Safety Council, and United Cerebral Palsy Association, Inc.) in accounting for almost four-fifths of voluntary health agency total income. At the other end of the distribution, over half of the agencies received only 2 percent of the income in both 1947 and 1963.

Sources of Income

While, by definition, a voluntary health agency is dependent upon public contributions for its funds, in 1963 the majority of agencies reported some part of their income in the form of earnings from investments, with some of the older agencies having built up substantial endowment funds.[9] The "average" agency,

[8] Among the larger of the organizations with research interests established after 1950 are the National Association for Retarded Children (1953), National Foundation for Neuromuscular Diseases (1953), Epilepsy Foundation (1954), National Cystic Fibrosis Research Foundation (1955), Parkinson's Disease Foundation (1957), Deafness Research Foundation (1958), and United Health Foundation (1961).

[9] One agency, Seeing Eye, Inc., now actually receives the major part of its income in earnings from investments. Since its principal fund was built up from public contributions in the past, it is included in this study to provide continuity for the entire postwar period.

TABLE 1.—Voluntary Health Agencies' Income, 1947–63

Income interval (thousands)	1963		1960		1957		1947	
	No. of agencies	Income (millions)	No. of agencies	Income (millions)	No. of agencies	Income (millions)	No. of agencies	Income (millions)
Total	58	$255. 0	50	$232. 0	45	$207. 0	24	$77. 0
More than $20,000	6	170. 6	5	147. 2	5	148. 8	1	22. 2
$10,000 to $19,999	2	24. 7	2	31. 1	2	24. 8	3	41. 0
$5,000 to $9,999	4	24. 6	4	25. 5	1	5. 2	0	0
$1,000 to $4,999	12	27. 5	9	20. 2	10	22. 4	4	9. 8
$500 to $999	3	2. 2	5	3. 5	4	2. 5	3	2. 1
$100 to $499	17	4. 6	17	4. 1	13	3. 0	9	1. 8
Less than $100	14	0. 8	8	0. 3	10	0. 4	4	0. 2
	Percent distribution							
Total	100. 0	100. 0	100. 0	100. 0	100. 0	100. 0	100. 0	100. 0
More than $20,000	10. 3	66. 9	10. 0	63. 5	11. 1	71. 9	4. 1	28. 8
$10,000 to $19,999	3. 5	9. 7	4. 0	13. 4	4. 5	12. 0	12. 5	53. 2
$5,000 to $9,999	6. 9	9. 6	8. 0	11. 0	2. 2	2. 5	0	0
$1,000 to $4,999	20. 7	10. 8	18. 0	8. 7	22. 2	10. 8	16. 7	12. 7
$500 to $999	5. 2	0. 9	10. 0	1. 5	8. 9	1. 2	12. 5	2. 7
$100 to $499	29. 3	1. 8	34. 0	1. 8	28. 9	1. 4	37. 5	2. 3
Less than $100	24. 1	0. 3	16. 0	0. 1	22. 2	0. 2	16. 7	0. 3

NOTE.—For 1963, the data cover 58 agencies known to have been in operation (51 of which responded to the survey; data for the remaining 7 were estimated by NIH on the basis of published reports and other ancillary sources); for each of the selected years prior to 1963, the data cover organizations which were also in existence in 1963. A few agencies which ceased to operate in the 1947–63 period are not covered. For each of the periods shown, the income included for the American National Red Cross represents that portion of their total income allocated by the agency to health purposes.

Source: National Institutes of Health.

however, reported only 3 percent of income from investments (table 2). Ten percent of income came from special fundraising events, product sales, service fees, and other sources. The major part of total income was received in the form of membership fees and contributions. Direct contributions by private individuals or groups accounted for two-thirds of agency income. Thirteen percent was channeled through united funds or community chests, which in turn received their funds not only from private individuals but also from business and philanthropic foundations. In addition, the latter two sources made direct contributions amounting to 6 percent of total agency income.

TABLE 2.—Distribution of Voluntary Health Agency Income by Source, 1963

Source	Percent distribution
Total	100. 0
Contributions	87. 3
Individuals	68. 1
United funds	13. 2
Business corporations	3. 1
Foundations	2. 9
Special events	5. 2
Government grants for research	0. 4
Investment income	3. 1
Other [1]	4. 0

[1] Includes product sales, service fees, etc.

NOTE.—Based on detailed information for 40 agencies reporting a total of 87 percent of the income for all voluntary health agencies operating on a national scale. Data for years prior to 1963 were not obtained.

Source: National Institutes of Health.

The Programs of the Voluntary Health Agencies

The characteristic pattern of the programs of voluntary health agencies is threefold in nature—the provision of patient and community services, the furthering of public and professional education in the prevention and treatment of disease and disability, and the pursuit of new knowledge. The agencies differ, however, in the relative importance attached to these aims—some stressing one aspect rather than another of this three-pronged involvement in health.

Information obtained from the 51 agencies responding to the mail survey was uniformly excellent in depicting programs in research though some gaps appeared in responses to questions designed to elicit data on other aspects of agency activities. The information obtained is sufficiently reliable, however, to provide a detailed distribution for 1963, and more summary data for the earlier periods on the purposes for which the voluntary health agencies expended their funds (table 3).

While the voluntary health agency effort as a whole has continued to stress the traditional functions of providing service to patients and promoting public and professional education, agencies have assigned an ever-increasing importance to research and the strengthening of research resources. In 1947, research and research training absorbed only 12 percent of total program expenditures (i.e., expenditures exclusive of fundraising and administrative costs). In 1957, research interests increased to one-quarter of the total program dollar, and by 1963 the share had risen to 30 cents (table 3). In that year, 43 cents was devoted to patient and community services, 17 cents to public education, and 10 cents to the education and training of health practitioners.

TABLE 3.—Trends in Distribution of Voluntary Health Agency Program Dollar, 1947–63

Item	1963	1960	1957	1947
	Percent distribution			
Total	100. 0	100. 0	100. 0	100. 0
Research and research training, total	29. 6	26. 6	25. 0	12. 3
Research	27. 0	24. 5	23. 1	11. 5
Training	2. 6	2. 1	1. 9	0. 8
Other programs, total	70. 4	73. 4	75. 0	87. 7
Professional education and training	10. 3	n.a.	n.a.	n.a.
Public education	17. 1	n.a.	n.a.	n.a.
Patient and community service	43. 0	n.a.	n.a.	n.a.

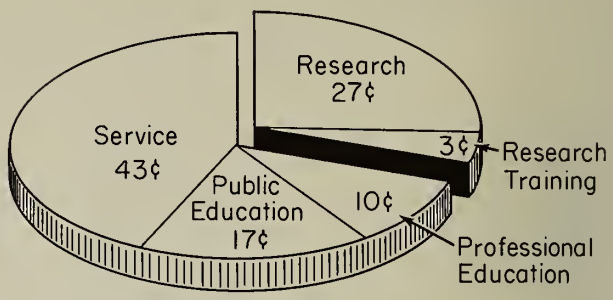
NOTE.—Based on data for 35 agencies, which in 1963 accounted for ⅘ of total income. Among the excluded agencies are the 2 agencies which draw upon funds raised for broad welfare programs and not merely for health concerns: the American National Red Cross and the United Health Foundation.

Source: National Institutes of Health.

Only 6 of the 51 respondent agencies reported no expenditures for research and research training in 1963 (table 4). Thirteen agencies,[10] on the other hand, reported the support of research and research training as their exclusive or predominant concern. These research-oriented organizations, however, accounted for only one-tenth of the total expenditures for research and research training. The 13 agencies which allocated between 25 and 50 percent of their program expenditures to research purposes provided four-fifths of the research and research training total.

CHART 2

Voluntary Health Agency Program Dollar, 1963



SOURCE: National Institutes of Health

Concentration of Research Expenditures

Included among the 13 agencies devoting between 25 and 50 percent of their program expenditures to the promotion of research are the 3 agencies which currently have research programs in excess of $5 million. These large programs mirror the American public's concern with the major causes of death—cancer and cardiovascular disease—and their confidence in the program of the agency that did so much to conquer polio; they are conducted by the American Cancer Society, the American Heart Association, and The National Foundation, which together account for two-thirds of the total research and research training funds of all voluntary health agencies. With six other agencies having research programs in excess of $1 million,[11] they account for 85 percent of the total.

[10] Brain Research Foundation, Children's Cancer Fund, Deafness Research Foundation, Damon Runyon Memorial Fund, Dysautanomia Association, Heart and Lung Foundation, Leonard Wood Memorial, Myasthenia Gravis Foundation Inc., National Council To Combat Blindness, National Cystic Fibrosis Research Foundarion, National Osteopathic Foundation, Parkinson's Disease Foundation, Inc., and Research To Prevent Blindness, Inc.

[11] These six were, in order of size of research program: United Health Foundation, Inc., Muscular Dystrophy Associations, Inc., Research to Prevent Blindness, National Tuberculosis Association, Damon Runyon Memorial Fund, and Arthritis Foundation.

TABLE 4.—Voluntary Health Agencies' Expenditures for Research and Research Training Compared With Total Program Expenditures, 1963

[Thousands of dollars]

Percent of total program expenditures for research and research training	Agencies		Total program expenditures		Expenditures for research and research training	
	Number	Percent	Amount	Percent	Amount	Percent
Grand total	51	----------	[1] n.a.	----------	[2] $47,475	----------
Total—Percent available	46	100.0	$148,650	100.0	44,043	100.0
100 percent	9	19.6	3,515	2.4	3,515	8.0
75 to 99 percent	2	4.3	333	0.2	263	0.6
50 to 74 percent	2	4.3	1,182	0.8	797	1.8
25 to 49 percent	13	28.3	82,818	55.7	35,373	80.3
10 to 24 percent	7	15.2	9,427	6.3	1,380	3.1
5 to 9 percent	4	8.7	28,858	19.4	2,343	5.3
1 to 4 percent	3	6.5	21,872	14.7	372	0.8
0 percent	6	13.0	645	0.4	0	0
Total—Percent not available	5	----------	----------	----------	3,432	----------

[1] Comparable data on total program expenditures are not available for 5 agencies, National Council on Alcoholism, National Kidney Foundation and Planned Parenthood, for which local expenditure data are inadequate, and American National Red Cross and United Health Foundation, where health activities are related to broad welfare programs.

[2] Includes national headquarters expenditures only for Planned Parenthood and the National Council on Alcoholism.

Source: National Institutes of Health.

At the other end of the scale, 13 agencies having research programs of less than $50 thousand each, account for less than 1 percent of the total expenditure (see table 5).

The concentration of the research support in 1963 was not quite as great as at the beginning of the postwar period. In 1947, 92 percent of the outlay for research and research training was provided by less than one-fifth of the agencies while in 1963, the same percentage was supplied by slightly more than one-fourth of the group. Concomitantly, agencies without research programs constituted slightly more than one-tenth of the total number in 1963, compared with almost one-third of the agencies in existence at the end of World War II.

Mechanisms of Research Support

Voluntary health agencies have always used a variety of means for furthering their research objectives; they have also been in the forefront in developing new and more effective mechanisms of research support.

In 1963, as in the past, the prevailing pattern of support was in the form of grants to others. Only 10 agencies reported conducting research programs with their own personnel;[12] outlays for these intramural programs totaled $2.5 million. This amount represents less than 6 percent of the total of $44 million spent by all agencies for the actual conduct of research and the support of the research environment (table 6). Studies conducted by the American Cancer Society and blood research conducted by the American Red Cross accounted for over half of the 1963 intramural program expenditures. The American Social Health Association and the Leonard Wood Memorial are unusual among the agencies covered by this study in carrying on their research program entirely within their own organizations.

Of the $40 million provided for the support of scientific investigations performed in other institutions, the underwriting of specific projects absorbed 70 percent. Funds for the expansion of physical facilities in the form of building and equipment grants accounted for 14 percent. Only eight agencies, however, made grants of this type. The National Foundation, with an award to the newly created Salk Institute, and Research To Prevent Blindness, Inc., with its contribution to the building funds of new or expanded eye research centers at Johns Hopkins University and the University of California at Los Angeles, accounted for

[12] American Cancer Society, American Foundation for the Blind, American National Red Cross, American Rehabilitation Foundation (formerly Sister Elizabeth Kenny Foundation), American Social Health Association, Leonard Wood Memorial, National Council on Alcoholism, National Parkinson Foundation, Inc., National Society for the Prevention of Blindness, and Planned Parenthood.

TABLE 5.—Voluntary Health Agencies' Expenditures for Research and Research Training by Size of the Combined Programs, 1947–63

[Thousands of dollars]

Size of research and research training program	1963				1960		1957		1947	
	Number of agencies	Expenditures			Number of agencies	Expenditures for research and training	Number of agencies	Expenditures for research and training	Number of agencies	Expenditures for research and training
		Research	Research training	Research and training						
Total	51	$43,664	$3,811	$47,475	48	[1] $37,405	44	[1] $31,752	21	[1] $4,888
More than $5,000	3	28,664	2,575	31,239	3	26,520	3	25,060	0	0
$1,000 to $5,000	6	8,824	446	9,270	3	4,241	1	1,881	2	3,353
$500 to $999	5	3,072	622	3,694	4	2,803	3	2,186	1	850
$250 to $499	4	1,242	51	1,293	3	1,268	2	745	1	305
$100 to $249	6	1,066	58	1,124	9	1,643	8	1,183	1	102
$50 to $99	[2] 8	556	8	564	[2] 9	671	[2] 8	434	3	150
$25 to $49	8	195	51	246	6	186	5	185	2	67
$1 to $24	5	45	0	45	6	73	7	78	[2] 5	61
0	6	0	0	0	5	0	7	0	6	0
	Percent distribution									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
More than $5,000	5.9	65.6	67.6	65.8	6.2	70.9	6.8	78.9	0	0
$1,000 to $5,000	11.8	20.2	11.7	19.5	6.2	11.3	2.3	5.9	9.5	68.6
$500 to $999	9.8	7.0	16.3	7.8	8.3	7.5	6.8	6.9	4.8	17.4
$250 to $499	7.8	2.8	1.3	2.7	6.2	3.4	4.5	2.3	4.8	6.2
$100 to $249	11.8	2.4	1.5	2.4	18.7	4.4	18.2	3.7	4.8	2.1
$50 to $99	15.7	1.3	0.2	1.2	18.7	1.8	18.2	1.4	14.3	3.1
$25 to $49	15.7	0.4	1.4	0.5	12.5	0.5	11.4	0.6	9.5	1.4
$1 to $24	9.8	0.1	0	0.1	12.5	0.2	15.9	0.2	23.8	1.2
0	11.8	0	0	0	10.4	0	15.9	0	28.6	0

[1] Expenditures for research training alone amounted, in thousand of dollars, to $2,874 in 1960; $2,351 in 1957; $316 in 1947

[2] Includes 2 agencies which might fall within a higher category if data on local expenditures for research were available.

Source: National Institutes of Health.

90 percent of the funds expended in this manner. While a comparison with recent years for agencies for which partial data are available would indicate a shift in relative importance from project grants to grants for buildings and equipment, this may be only a temporary phenomenon reflecting awards by a small number of agencies.

One-tenth of extramural funds were channeled into the general operating funds of research institutions with 11 agencies reporting grants of this type. Three-fourths of the funds dispensed in this way came from two agencies, the American Cancer Society, which allocated one-fifth of its research awards to the general support of a number of different institutions, and from Muscular Dystrophy Associations of America, Inc., which devoted over half of its funds for the support of research to the general budget of its subsidiary organization, the Institute for Muscle Diseases, Inc., in New York City.

Grants to scientists for the general support of their research without reference to specific projects accounted for 6 percent of extramural research expenditures in 1963. American Foundation for the Blind, Leukemia Society, and Parkinson's Disease Foundation were the only agencies following the lead of the American Heart Association and the American Cancer Society, pioneers in this type of award. The latter two agencies still accounted for 95 percent of such support, with the American Heart Association allocating over one-fifth of its research dollar and the American Cancer Society devoting 4 percent of its research funds to this type of grant.

TABLE 6.—Voluntary Health Agencies' Expenditures for Research by Type of Support, 1963

[Thousands of dollars]

Type of support	Expenditures		
	Amount	Percent	
Total	$43, 664	100. 0	
Intramural research	2, 544	5. 8	
Current operating	2, 213	5. 1	
Building and/or equipment	331	0. 7	
Grants	40, 071	91. 8	100. 0
Projects	27, 721	63. 5	69. 2
Building and/or equipment	5, 627	12. 9	14. 0
General support of institution	4, 332	9. 9	10. 8
General support of scientists	2, 391	5. 5	6. 0
Other, including conferences, administration, etc	1, 049	2. 4	

Source: National Institutes of Health.

The holding of research conferences and underwriting of research publication costs absorbed less than 1 percent of the total research expenditures although 13 agencies reported expenditures for these purposes in 1963. Two agencies rendered only this type of research support: Allergy Foundation of America and the American Diabetes Association. (See app. table 3 for a detailed distribution of the types of research support provided by the nine agencies disbursing over four-fifths of the research funds in 1963.)

Locale of Extramural Research

Of the $40 million made available by voluntary health agencies in 1963 in the form of grants to others in support of research, approximately three-fifths went to educational institutions in the United States and somewhat more than one-fifth to independent research institutes (table 7). Hospitals, both university affiliated and nonaffiliated, received 13 percent of the support. Investigations carried on in institutions abroad received 2 percent of the funds.

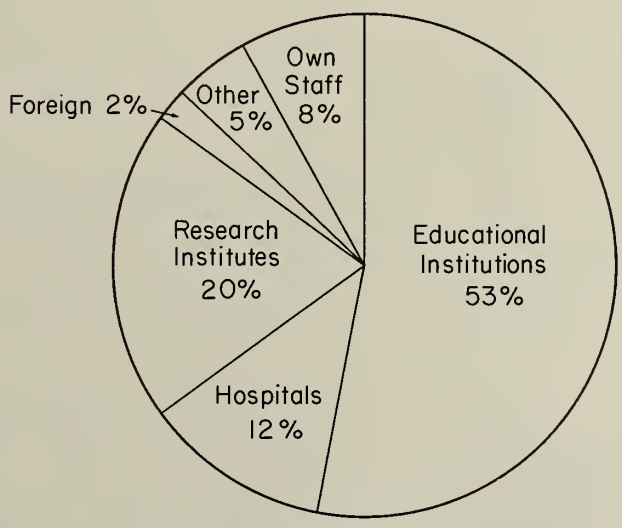
The relatively high proportion going to research institutes that are independent of educational institutions reflects the large grants made by The National Foundation and by Muscular Dystrophy Associations of America, Inc., for the building and general operating funds of institutes which they have helped establish.

Of the $28 million disbursed in the form of grants for specific research projects, only 13 percent went to research institutes. Sixty percent went to educational institutions and 16 percent to hospitals. Scientists abroad received 3 percent of the project-grant funds with most of the foreign outlays made by four agenices: Damon Runyon Memorial Fund, Muscular Dystrophy Associations of America, Inc., The National Foundation, and National Multiple Sclerosis Society. Each of these agencies spent over $100,000 on research projects conducted in other countries.

Data are not available for a complete analysis of the past patterns of the distribution of research funds by performer. Responses of agencies which, in 1963 accounted for two-thirds of total project-grant expenditures, indicate that although educational institutions and hospitals in this country have been the major recipients of project funds, their share in recent years has declined somewhat as independent research institutes and other performers have grown in importance.

CHART 3

Recipients of Voluntary Health Agency Research Expenditures, 1963



$44 million

SOURCE: National Institutes of Health

Research Training Expenditures

While any expenditure in support of research, whether geared to a specific research project or to the general support of the research environment, may also contribute to the training of research manpower, this is especially true of much of the research support rendered by voluntary health agencies. Many agencies conceive of the role they are particularly suited to play as that of assisting young scientists at the beginning of their careers,[13] and here the line between research and training is difficult to draw. Five agencies, with little or no training programs as such, but with expenditures for research totaling $2 million in 1963, reported that it was their policy to give more than half their research support to promising young investigators. Many other agencies without training programs reported that while they had no fixed policy to favor young scientists many beginning investigators were recipients of research grants.

The element of training in the more than $40 million spent by 45 agencies in 1963 for the actual conduct of research and the strengthening of the research environment is particularly important when one compares these figures with the expenditures for training of research manpower. Only 17 agencies reported having research training programs as distinct from their programs of underwriting research; their expenditures, so identified, totaled less than $4 million (table 8). American Cancer Society and American Heart Association provided two-thirds of these training funds; and with the Arthritis Foundation and United Cerebral Palsy Association, Inc., they accounted for almost nine-tenths of the total.

Most of the support of research training took the form of fellowships or other awards to individuals who had already earned the Ph. D. or M.D. degree. Postdoctoral awards to approximately 400 scientists absorbed 73 percent of the funds while awards made to approximately 300 students at less than the doctoral level absorbed 9 percent. About 3 percent was spent in recruitment activities to interest students in research careers. The remaining 15 percent was divided almost equally between the support of special training programs and the general support of training institutions.

[13] On page 12 of its 1963 annual report, the American Heart Association states, "Through affilate and chapter programs especially, it can and does assist the young research scientist at the critical stage early in his career when he has not yet achieved national stature."

TABLE 7.—Recipients of Research Grant Expenditures Made by Voluntary Health Agencies, 1963

Item	Research grant expenditures									
	Total		Projects		Buildings and equipment		General support			
							Institutions		Scientists	
	Number of agencies	Amount (thousands)	Number of agencies	Amount (thousands)	Number of agencies	Amount (thousands)	Number of agencies	Amount (thousands)	Number of agencies	Amount (thousands)
Total	39	$40, 071	37	$27, 721	8	$5, 627	11	$4, 332	5	$2, 391
	Percent distribution									
Total	(1)	100	(1)	100	(1)	100	(1)	100	(1)	100
Foreign	29	2	27	3	0	0	0	0	20	1
United States	100	98	100	97	100	100	100	100	100	99
Educational institutions	85	58	85	61	88	30	60	58	100	99
Hospitals	50	13	48	16	38	6	50	12	0	0
Research institutes	35	22	33	13	13	64	40	27	0	0
Other	38	5	29	7	0	0	20	3	0	0

[1] Distribution of the number of agencies is not additive to 100 percent.

Source: National Institutes of Health.

TABLE 8.—Voluntary Health Agencies' Expenditures for Research Training by Type of Program, 1963

[Thousands of dollars]

Item	Number of agencies	Expenditures	
		Amount	Percent
Total	17	$3, 811	100. 0
Recruitment activities	1	135	3. 6
Subdoctoral awards	11	356	9. 3
Postdoctoral awards	14	2, 786	73. 1
Special programs	3	281	7. 4
Institutional support	2	253	6. 6

Source: National Institutes of Health.

Areas of Concern

With much of today's research crossing traditional, disciplinary lines, and with many of the conceptions of disease undergoing radical reformulations, it is difficult to classify the research support by disease entities. Since most of the agencies, however, make their appeals for funds in terms of certain popularly conceived disease areas, it is of some interest to examine the distribution of income and research support expenditures in these terms. In table 9 the respondent agencies have been classified into seven general disease areas with six agencies falling into an eighth nondisease-oriented category. The seven disease areas have been selected to correspond roughly with the concerns of the categorical institutes of the National Institutes of Health, but do not provide categories that are truly mutually exclusive. For example, research in virology or immunology that would seem to be most appropriately categorized under "allergy and infectious disease" may equally pertain to problems being explored in connection with cancer or arthritis. The National Foundation presents a particular problem of classification with its early concern with combating the highly infectious

TABLE 9.—Voluntary Health Agencies' Income and Expenditures for Research and Research Training by Disease Categories, 1947–63

Disease category of agency	Percent distribution							
	Total income				Expenditures for research and research training			
	1963	1960	1957	1947	1963	1960	1957	1947
Total	100. 0	100. 0	100. 0	100. 0	100. 0	100. 0	100. 0	100. 0
Allergy and infectious diseases [1]	12. 2	13. 1	14. 3	23. 4	3. 8	3. 9	3. 1	8. 4
Arthritis and metabolic diseases [2]	2. 9	2. 6	1. 7	0. 1	4. 0	3. 5	1. 8	0
Cancer [3]	18. 7	16. 4	16. 8	18. 3	32. 9	36. 6	42. 1	50. 8
Heart and kidney [4]	12. 2	12. 7	10. 4	0	20. 8	24. 8	19. 7	0
Mental and social health [5]	3. 6	3. 4	2. 7	1. 9	1. 9	1. 6	1. 1	0. 5
Mental retardation [6]	4. 6	3. 7	0. 9	0	0. 3	0. 2	0. 2	0
Neurological and other crippling diseases [7]	32. 7	37. 3	41. 6	39. 4	29. 7	27. 0	31. 5	39. 9
(Blindness)	(3. 0)	(2. 0)	(1. 7)	(1. 8)	(4. 9)	(1. 3)	(0. 8)	(2. 1)
General [8]	13. 1	10. 8	11. 6	16. 9	6. 6	2. 4	0. 5	0. 4

[1] Allergy Foundation, National TB Association, Leonard Wood Memorial.

[2] American Diabetes Association, Arthritis Foundation, National Cystic Fibrosis Research Foundation, National Hemophilia Foundation.

[3] American Cancer Society, Children's Cancer Fund, Damon Runyon Memorial Fund, Leukemia Society.

[4] American Heart Association, Heart and Lung Foundation, National Kidney Foundation.

[5] American Social Health Association, National Association for Mental Health, National Council on Alcoholism.

[6] National Association for Retarded Children.

[7] American Foundation for the Blind, Eyes Right, National Aid to the Visually Handicapped, National Council To Combat Blindness, National Society for the Prevention of Blindness, Research To Prevent Blindness, Seeing Eye, Inc., Alexander Graham Bell Association, Deafness Research Foundation, Brain Research Foundation, American Epilepsy Federation, Epilepsy Foundation, National Epilepsy League, United Epilepsy Association, Dysautonomia Association, American Parkinson's Disease Association, National Parkinson Foundation, Parkinson's Disease Foundation, Muscular Dystrophy Associations of America, Inc., Myasthenia Gravis Foundation, National Foundation for Neuromuscular Diseases, National Multiple Sclerosis Society, United Cerebral Palsy Association, American Rehabilitation Foundation (Sister E. Kenny), The National Foundation, National Paraplegia Foundation, National Society for Crippled Children and Adults.

[8] American Fund for Dental Education, American National Red Cross (health activities), Maternity Center Association, National Osteopathic Foundation, Planned Parenthood, United Health Foundations, including research functions previously carried by National Fund for Medical Education.

Source: National Institutes of Health.

disease of poliomyelitis and with its present concern with birth defects. Since the neurological effects of polio provided the stimulus for the public's generous support of the early work of The National Foundation, this agency was grouped for the entire postwar period with those concerned with "neurological and other crippling diseases" even though its research programs cover almost the entire spectrum of biological and medical investigation.

With these limitations in mind, it is nevertheless of interest to note that out of every dollar contributed in 1963 to health agencies, 33 cents went to those attacking the severely crippling diseases, including the neurological diseases and sensory disorders. Agencies fighting the two major killers, cancer and cardiovascular diseases, received 19 cents and 12 cents, respectively. Organizations fighting allergy and infectious diseases also received 12 cents, and agencies which were not disease-oriented received 13 cents. The remaining 11 cents were divided among agencies committed to combating mental retardation, metabolic diseases, such as arthritis, diabetes and cystic fibrosis, and mental and social diseases.

The major shift during the postwar years in the public support of activities in these different areas has been a sharp decline in contributions to The National Foundation after that agency's success with the development of the Salk vaccine against polio. This decline has been only partially counterbalanced by contributions to new agencies combating other crippling diseases. The 33 cents of the health agency dollar received in 1963 by agencies committed to battling neurological and other major crippling diseases is to be compared with 42 cents received by such agencies in 1957. Infectious diseases have also declined in relative importance as a target for the public's health-agency dollar; all other categories have gained in relative importance.

Somewhat different shifts have occurred in the disease orientation of the research support coming out of the voluntary health agency movement. In 1947 half of the total of $5 million spent for research and research training was oriented toward cancer control, with most of the remainder spent by The National Foundation in its efforts to conquer polio. In 1957 with the entry of many new agencies into the field and with the growth of research support to a level above $30 million, cancer was the target for 42 percent of the research and research training dollars; in 1963, though still the most important single research area, for 33 percent. Neurological and other crippling diseases have also declined slightly while all the other areas have grown since 1957 in relative importance as recipients of voluntary health agency research support. The greatest relative gain has occurred in the research supported by those agencies which do not appeal to the public in terms of any particular disease area. The research and training expenditures of such "general" or nondisease-oriented agencies rose from less than 1 percent in 1947 and 1957 to almost 7 percent of the total in 1963. Some of this gain is due to the growth of the American Red Cross blood research program but most is due to the emergence of the United Health Foundation under whose auspices money raised through the United Fund movement is channeled into health research. Much of the research supported under these auspices is actually disease-oriented, but the money is not raised with a commitment to fight any particular disease.

As to be expected, most of the funds for research provided by voluntary health agencies supported investigations in the life sciences. It is estimated that little more than 10 percent of the research support in 1963 was for work in the physical and social sciences.

Outlook for the Future

All of the voluntary health agencies having research programs in 1963 plan to continue these programs in the foreseeable future and many hope to increase their research expenditures. A continuing upward trend in research support appears to be borne out by the 1964 expenditure figures available for 14 of the agencies accounting for almost half of the research and research training expenditures in 1963. Expenditures for these purposes by this group of agencies in 1964 increased 6½ percent despite a slight decline in total revenue received by the group as a whole.

Few agencies anticipate shifts in emphasis in their research programs. The changes contemplated arise from a recognition of the increasing relevance of work in the social and behavioral sciences to health problems. A somewhat greater proportion of the health agency research dollar may be expected to support investigations in these fields in the future. In general, however, it would appear that at the time of the inquiry voluntary health agencies expected to continue to operate very much in the same manner as at present. Their concern with particular diseases will lead them into new areas of research, both clinical and basic; their desire to enlist the best scientific minds in the fight against disease will lead them to support the work of young scientists at the beginning of their careers as well

as the work of seasoned investigators; and the flexibility of their organizations will enable them to blaze new trails with a minimum of delay. It may also be expected that continued active involvement with research will further strengthen the role voluntary health agencies are uniquely suited to play, that of preparing the way for the fullest utilization of the new knowledge that research will yield.

Our country today stands on the threshold of new and far-reaching developments in the provision of improved health care and services to the American public.

"Schools, professional associations, supportive agencies, and community services have their parts to play in extending the research base of medical education and in bringing scientific medicine to the greatest possible number of people. The physician, with the aid of these groups, will seek better means to further his self-development, adapting and contributing to the dynamic state of knowledge. ***And the voluntary health agency will remain an integral part of the medical community, continuing to serve importantly in the conquest of disease.***"[14]

NOTE ON METHOD

The agencies covered by this survey were asked to follow, in general, the definitions set forth in ***Accounting and Financial Reporting Procedures for Voluntary Health Agencies,*** published by the National Health Council in 1962.[15] This is an accounting guide prepared by the National Health Council Committee on Uniform Accounting Principles, which included representatives of 18 national voluntary health agencies. A copy of the guide was sent along with the survey questionnaire to any of the recipient agencies which were not members of the National Health Council.

Definitions

The following are significant definitions used in the survey:

Program expenditures include amounts actually expended (not appropriated) for activities encompassed under the categories of (1) research, (2) public education in health matters, (3) professional education, (4) patient services, and (5) community services together with the operating expenses attributable to each of these program activities.

Supporting service or nonprogram expenditures include amounts actually expended for activities encompassed under the categories of (1) public information (i.e., publicizing an agency's programs among the community-at-large), (2) fundraising, (3) field studies and reorganization, and (4) administrative and general expenses.

Research is any systematic intensive study directed toward fuller scientific knowledge of the health problem(s) with which an agency is concerned or toward the development of new or improved means of alleviating the problem. It would include a pilot service project if, in such a project, new means of dealing with a problem are being developed and systematic measures of their effectiveness are employed. It does not include the routine gathering of statistics or a survey of facts unique to a particular situation from which scientific generalizations are not being sought.

Expenditures for research include awards or grants-in-aid made for the purpose of supporting scientific studies plus all other costs or expenditures incurred as a concomitant of conducting a research program. Expenditures for promoting communication within the research community by means of publications, conferences, etc., are also included.

Research training expenditures include all expenditures aimed at increasing the pool of research talent and enlarging its competence. They cover recruitment activities designed to stimulate interest in research careers on the part of high school and college students as well as scholarships, fellowships, education programs, and general institutional support to provide actual training in scientific investigations. They may include a project grant to a young scientist if he is working under the supervision and guidance of another and the major intent of the award is to provide him with research experience.

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[14] James A. Shannon, Director, NIH, "The Emerging Role of Science in Medical Education and Service", an address at the annual meeting of the National Tuberculosis Association, Chicago, May 30, 1965. (Italics supplied.)

[15] Later superseded by and incorporated in ***Standards of Accounting and Financial Reporting for Voluntary Health and Welfare Organizations,*** published jointly by National Health Council and National Social Welfare Assembly in 1964.

Mechanisms of Research Support

Intramural expenditures include all expenditures other than administrative expenditures made by an agency in connection with research performed by the agency's own employees, whether in this country or abroad.

Specific-project-grant expenditures include all payments made for the carrying out of research on clearly defined problems including expenditures for any equipment acquired for use on the specific projects.

Building-and/or-basic-equipment expenditures include expenditures for new or expanded buildings, for capital equipment items integrated with a facility, and for any major equipment for which depreciation accounts are ordinarily maintained.

General-support-of-institution expenditures include any payments to organizations where discretion is given in the use of the funds within the framework of an established research competency.

General-support-of-scientist expenditures include payments to mature investigators in general support of their work without reference to specific projects.

Research-administration expenditures include all expenditures directly attributable to the administration of the research program including such items as salaries, office expenses, travel expenses of staff and consultants engaged in the establishment and overseeing of the research program, whether intramural or extramural.

Coverage and Response

A listing of 58 possible respondents to the survey was compiled on the basis of the following sources:

1. *American Medical Association, Directory of National Voluntary Organizations,* Chicago, 1964.
2. *Encyclopedia of Associations,* vol. 1, "National Organizations of the United States", Gale Research Co., Detroit, 1964.
3. National Health Council files.

Information with regard to 1963 expenditures for research and research training was obtained from 51 of the 58 agencies. These 51 are estimated to have received 97 percent of total voluntary health agency income in 1963 and to have accounted for an even larger percentage of the research-support expenditure. While not all of the 51 respondent agencies were able to report their 1963 expenditures in the detail requested, sufficient information was furnished to define clearly the pattern of support in that year. Information with regard to the mechanisms used for research and training support was furnished with respect to 98 percent of the reported expenditures; information as to recipients of extramural research support was furnished with regard to all but 18 percent of the grant expenditures.

For benchmark years in the postwar period prior to 1963, data showing the level of research and research training expenditures were available for nearly all the agencies for years they were in existence back to 1957. For 1947, however, estimates had to be made for a majority of the agencies on the basis of annual reports and other published materials.

For 35 agencies accounting for four-fifths of 1963 income, total program expenditure data were available for prior years to indicate the postwar trend in the relative importance of research to other agency programs.

Background data on mechanisms of support and recipients were available only back to 1957 for a representative group of agencies. For the 6-year period, 1957–63, data with respect to mechanisms of support used and recipients of outside research financing were available for over 70 percent of the expenditures.

APPENDIX

APPENDIX TABLE 1.—*The Fifty-one Respondent Voluntary Health Agencies: Research and Research Training Expenditures in Relation to Total Program Expenditures, 1957, 1960, 1963*

[Thousands of dollars]

Agency	1963			1960			1957		
	Total program expenditures	Research and research training expenditures		Total program expenditures	Research and research training expenditures		Total program expenditures	Research and research training expenditures	
		Amount	Percent of total program		Amount	Percent of total program		Amount	Percent of total program
Grand total (51 respondent agencies)	n.a.	$47,475	n.a.	n.a.	$37,405	n.a.	n.a.	$31,752	n.a.
Subtotal (46 agencies where expenditures are available for both total program and research and research training)	$148,650	44,043	30	$136,613	36,301	27	$126,977	31,485	25
Allergy Foundation of America	88	27	31	96	32	33	60	15	25
American Cancer Society	32,472	14,218	44	28,985	12,089	42	27,054	12,408	46
American Diabetes Association	430	36	8	[1] 350	[1] 25	[1] 7	[1] 350	[1] 18	[1] 5
American Foundation for the Blind	1,877	255	14	1,453	92	6	1,081	67	6
American Fund for Dental Education	226	5	2	53	0	0	0	0	0
American Heart Association	20,036	9,567	48	18,278	9,053	50	12,401	6,167	50
American National Red Cross	n.a.	749	n.a.	n.a.	123	n.a.	n.a.	65	n.a.
American Rehabilitation Foundation (Sister E. Kenny)	1,798	279	16	[1] 1,350	[1] 200	[1] 15	[1] 750	[1] 100	[1] 13
American Social Health Association	385	173	45	294	103	35	317	88	28
Arthritis Foundation	3,265	1,107	34	[2] 2,520	800	[2] 32	[2] 1,550	441	[2] 28
Brain Research Foundation	34	34	100	[3] 80	[3] 73	[3] 91	[1] 28	[1] 25	[1] 89
Children's Cancer Fund of America	10	10	100	21	19	90	38	38	100
Damon Runyon Memorial Fund	1,165	1,165	100	1,332	1,332	100	885	885	100
Deafness Research Foundation	102	102	100	44	44	100	n.i.e.	n.i.e.	n.i.e.
Dysautonomia Association	23	23	100	18	18	100	[1] 10	[1] 10	[1] 100
Epilepsy Foundation	819	58	2	[4] 865	[4] 18	[4] 2	[1] 765	[1] 10	[1] 1
Eyes Right, Inc	7	2	29	16	2	12	1	0	0
Heart and Lung Foundation	25	25	100	30	30	100	6	6	100
Leonard Wood Memorial	464	464	100	211	211	100	182	182	100
Leukemia Society, Inc	710	249	34	307	219	71	37	37	100
Muscular Dystrophy Associations of America, Inc	4,207	1,766	42	3,876	1,711	44	3,263	1,881	58
Myasthenia Gravis Foundation	36	30	83	35	29	83	17	10	59
National Association for Mental Health	[5] 4,272	[5] 639	[5] 15	[2] 3,530	405	[2] 12	[2] 2,040	[6] 210	[2] [6] 10
National Association for Retarded Children	[7] 7,900	125	[7] 2	[2] 5,750	79	[2] 1	[2] 1,100	[1] 30	[1] [2] 3
National Council on Alcoholism	n.a.	[8] 73	n.a.	n.a.	[8] 77	n.a.	n.a.	[8] 50	n.a.
National Council to Combat Blindness	297	233	78	274	220	80	164	133	81
National Cystic Fibrosis Research Foundation	1,050	719	68	[1] 650	[1] 500	[1] 77	[1] 150	[1] 115	[1] 77
National Foundation	19,278	7,454	39	23,799	5,378	23	38,467	6,485	17
National Foundation for Neuromuscular Diseases	164	67	41	305	166	54	177	132	75
National Hemophilia Foundation	260	31	12	87	13	15	41	9	22
National Kidney Foundation	n.a.	[7] 295	n.a.	n.a.	[1] 200	n.a.	n.a.	[1] 100	n.a.
National Multiple Sclerosis Society	1,930	668	35	[2] 1,700	443	[2] 26	[2] 1,200	304	[2] 25
National Osteopathic Foundation	132	78	59	93	85	91	58	55	95
National Paraplegia Foundation	14	5	36	16	3	19	40	30	75
National Parkinson Foundation	129	26	20	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.
National Society for Crippled Children and Adults	13,746	242	2	11,789	420	4	9,548	211	2
National Society for Prevention of Blindness	598	81	14	396	71	18	288	57	20
National Tuberculosis Association	17,299	1,329	8	[2] 17,087	[9] 1,198	[2] [9] 7	[2] 16,243	[9] 786	[2] [9] 5
Parkinson's Disease Foundation	37	37	100	201	201	100	n.i.e.	n.i.e.	n.i.e.
Planned Parenthood-World Population	n.a.	[8] 68	n.a.	n.a.	[8] 66	n.a.	n.a.	[8] 52	n.a.
Research to Prevent Blindness, Inc	1,655	1,655	100	78	78	100	n.i.e.	n.i.e.	n.i.e.
Seeing Eye, Inc	493	69	14	391	26	7	337	0	0
United Cerebral Palsy Associations, Inc	10,310	920	9	9,720	865	9	7,980	515	6
United Epilepsy Association, Inc.[10]	232	70	30	[1] 165	[1] 50	[1] 30	[1] 85	[1] 25	[1] 29
United Health Foundation, Inc	n.a.	2,247	n.a.	n.a.	[11] 638	n.a.	n.a.	[11] 0	0
6 agencies reporting no expenditures for research and research training.[12]	645	0	0	368	0	0	264	0	0

[1] Estimated on basis of general trend.
[2] Total program expenditures estimated from figures on total income or total gross expenditures.
[3] Estimated on basis of 1961 figures appearing in AMA, *Handbook for Medical Societies and Individual Physicians on National Voluntary Health Agencies*, 1962.
[4] Estimated on basis of 1961 annual report.
[5] Based on 1962 figures.
[6] Estimate of research expenditures for entire organization based on expenditures of national headquarters.
[7] Estimate based on information contained in AMA, *Directory of National Voluntary Health Organizations*, 1964.
[8] Figures are for national headquarters only, and are therefore minimal research expenditures.
[9] Administrative costs of research have been estimated.
[10] In 1964 merged with others to form American Epilepsy Association, Inc. See footnote 12.
[11] Research disbursements of the National Fund for Medical Education, which managed the medical research program of the United Fund movement before the creation of the United Health Foundation in 1961.
[12] Alexander Graham Bell Association for the Deaf, American Parkinson Disease Association, Inc., Maternity Center Association, National Aid to Visually Handicapped, Inc., American Epilepsy Federation, and National Epilepsy League. The last 2 merged in 1964 with United Epilepsy Association, Inc., to form Epilepsy Association of America.

NOTE.—Figures for 1957 and 1960 could in many instances be supplied by the respondents only on an estimated basis; where an estimate was made by the author, special note has been made. N.i.e. denotes agency not in existence in the given year.

Source: National Institutes of Health.

APPENDIX TABLE 2.—*The Forty-five Voluntary Health Agencies With Research and Research Training Expenditures, 1957, 1960, 1963*

[Thousands of dollars]

Agency	1963			1960			1957		
	Total research and research training	Research	Research training	Total research and research training	Research	Research training	Total research and research training	Research	Research training
Total	$47,475	$43,664	$3,811	$37,405	$34,531	$2,874	$31,752	$29,401	$2,351
Allergy Foundation of America	27	6	21	32	0	32	15	2	13
American Cancer Society	14,218	13,186	1,032	12,089	11,675	414	12,408	12,177	231
American Diabetes Association	36	11	25	[1] 25	[1] 10	[1] 15	[1] 18	[1] 8	[1] 10
American Foundation for the Blind	255	255	0	92	92	0	67	67	0
American Fund for Dental Education	5	5	0	0	0	0	0	0	0
American Heart Association	9,567	8,054	1,513	9,053	7,641	1,412	6,167	[2] 5,205	[2] 962
American National Red Cross	749	749	0	123	123	0	65	65	0
American Rehabilitation Foundation (Sister E. Kenny)	279	279	0	[1] 200	[1] 200	[1] 0	[1] 100	[1] 100	[1] 0
American Social Health Association	173	173	0	103	103	0	88	88	0
Arthritis Foundation	1,107	819	288	800	586	214	441	309	132
Brain Research Foundation	34	34	0	[3] 73	[3] 73	[3] 0	[1] 25	[1] 25	[1] 0
Children's Cancer Fund of America	10	10	0	19	19	0	38	38	0
Damon Runyon Memorial Fund	1,165	1,068	97	1,332	1,197	135	885	764	121
Deafness Research Foundation	102	102	0	44	44	0	n.i.e.	n.i.e.	n.i.e.
Dysautonomia Association	23	23	0	18	18	0	[1] 10	[1] 10	[1] 0
Epilepsy Foundation	58	58	0	[4] 18	[4] 18	[4] 0	[1] 10	[1] 10	[1] 0
Eyes Right, Inc	2	2	0	2	2	0	0	0	0
Heart and Lung Foundation	25	25	0	30	30	0	6	6	0
Leonard Wood Memorial	464	413	51	211	211	0	182	182	0
Leukemia Society, Inc	249	249	0	219	212	7	37	35	2
Muscular Dystrophy Associations of America, Inc	1,766	1,742	24	1,711	1,691	20	1,881	1,879	2
Myasthenia Gravis Foundation	30	25	5	29	26	3	10	10	0
National Association for Mental Health	[5] 639	[5] 635	[5] 4	405	401	4	[6] 210	[6] 210	[6] 0
National Association for Retarded Children	125	125	0	79	79	0	[1] 30	[1] 30	[1] 0
National Council on Alcoholism	[7] 73	[7] 73	[7] 0	[7] 77	[7] 77	[7] 0	[7] 50	[7] 50	[7] 0
National Council to Combat Blindness	233	175	58	220	172	48	133	104	29
National Cystic Fibrosis Research Foundation	719	699	20	[1] 500	[1] 490	[1] 10	[1] 115	[1] 110	[1] 5
National Foundation	7,454	7,424	30	5,378	5,220	158	6,485	5,880	605
National Foundation for Neuromuscular Diseases	67	67	0	166	166	0	132	132	0
National Hemophilia Foundation	31	31	0	13	13	0	9	9	0
National Kidney Foundation	[8] 295	[8] 295	[8] 0	[1] 200	[1] 200	[1] 0	[1] 100	[1] 100	[1] 0
National Multiple Sclerosis Society	668	590	78	443	403	40	304	248	56
National Osteopathic Foundation	78	78	0	85	85	0	55	55	0
National Paraplegia Foundation	5	5	0	3	3	0	30	30	0
National Parkinson Foundation	26	26	0	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.
National Society for Crippled Children and Adults	242	242	0	420	420	0	211	206	5
National Society for Prevention of Blindness	81	81	0	71	71	0	57	57	0
National Tuberculosis Association	1,329	1,292	37	[9] 1,198	[9] 1,159	[9] 39	[9] 786	[9] 773	[9] 13
Parkinson's Disease Foundation	37	37	0	201	201	0	n.i.e.	n.i.e.	n.i.e.
Planned Parenthood-World Population	[7] 68	[7] 68	[7] 0	[7] 66	[7] 66	[7] 0	[7] 52	[7] 52	[7] 0
Research to Prevent Blindness, Inc	1,655	1,655	0	78	78	0	n.i.e.	n.i.e.	n.i.e.
Seeing Eye, Inc	69	61	8	26	18	8	0	0	0
United Cerebral Palsy Associations, Inc	920	400	520	865	550	315	515	350	165
United Epilepsy Association, Inc.[10]	70	70	0	[1] 50	[1] 50	[1] 0	[1] 25	[1] 25	[1] 0
United Health Foundation, Inc	2,247	2,247	0	[11] 638	[11] 638	[11] 0	[11] 0	[11] 0	[11] 0

[1] Estimated on basis of general trend.
[2] Distribution of total expenditures between research and research training estimated on basis of later years for which figures were available.
[3] Estimated on basis of 1961 figures appearing in AMA, *Handbook for Medical Societies and Individual Physicians on National Voluntary Health Agencies*, 1962.
[4] Estimated basis of 1961 annual report.
[5] Based on 1962 figures.
[6] Estimate of research expenditures for entire organization based on expenditures of national headquarters.
[7] Expenditures are for national headquarters only and are therefore minimal.
[8] Estimate based on information contained in AMA, *Directory of National Voluntary Health Organizations*, 1964.
[9] Administrative costs of research program have been estimated.
[10] In 1964, merged with others to form American Epilepsy Association, Inc.
[11] Expenditures of the National Fund for Medical Education, which managed the medical research program of the United Fund movement before the creation of the United Health Foundation in 1961.

Source: National Institutes of Health.

Appendix Table 2A.—*Percentage Distribution of the Research and Research Training Expenditures of Forty-five Voluntary Health Agencies, 1957, 1960, 1963*

Agency	1963			1960			1957		
	Total research and research training	Research	Research training	Total research and research training	Research	Research training	Total research and research training	Research	Research training
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Allergy Foundation of America	0.1	(*)	0.6	0.1	0	1.1	(*)	(*)	0.6
American Cancer Society	30.0	30.2	27.1	32.3	33.8	14.4	39.1	41.4	9.8
American Diabetes Association	0.1	(*)	0.7	[1] 0.1	[1] (*)	[1] 0.5	[1] 0.1	[1] (*)	[1] 0.4
American Foundation for the Blind	0.5	0.6	0	0.2	0.3	0	0.2	0.2	0
American Fund for Dental Education	(*)	(*)	0	0	0	0	0	0	0
American Heart Association	20.2	18.4	39.7	24.2	22.1	49.1	19.4	[2] 17.7	[2] 40.9
American National Red Cross	1.6	1.7	0	0.3	0.4	0	0.2	0.2	0
American Rehabilitation Foundation (Sister E. Kenny)	0.6	0.6	0	[1] 0.5	[1] 0.6	[1] 0	[1] 0.3	[1] 0.4	[1] 0
American Social Health Association	0.4	0.4	0	0.3	0.3	0	0.3	0.3	0
Arthritis Foundation	2.3	1.9	7.6	2.1	1.7	7.4	1.4	1.1	5.6
Brain Research Foundation	0.1	0.1	0	[3] 0.2	[3] 0.2	[3] 0	[1] 0.1	[1] 0.1	[1] 0
Children's Cancer Fund of America	(*)	(*)	0	0.1	0.1	0	0.1	0.1	0
Damon Runyon Memorial Fund	2.5	2.4	2.5	3.6	3.5	4.7	2.8	2.6	5.1
Deafness Research Foundation	0.2	0.2	0	0.1	0.1	0	n.i.e.	n.i.e.	n.i.e.
Dysautonomia Association	(*)	0.1	0	0.1	0.1	0	[1] (*)	[1] (*)	[1] 0
Epilepsy Foundation	0.1	0.2	0	[4] 0.1	[4] 0.1	[4] 0	[1] (*)	[1] (*)	[1] 0
Eyes Right, Inc	(*)	(*)	0	(*)	(*)	0	0	0	0
Heart and Lung Foundation	0.1	0.1	0	0.1	0.1	0	(*)	(*)	0
Leonard Wood Memorial	1.0	0.9	1.3	0.6	0.6	0	0.6	0.6	0
Leukemia Society, Inc	0.5	0.6	0	0.6	0.6	0.3	0.1	0.1	0.1
Muscular Dystrophy Associations of America, Inc	3.7	4.0	0.6	4.6	4.9	0.7	6.0	6.4	0.1
Myasthenia Gravis Foundation	0.1	0.1	0.1	0.1	0.1	0.1	(*)	(*)	0
National Association for Mental Health	[5] 1.3	[5] 1.4	[5] 0.1	1.1	1.2	0.1	[6] 0.7	[6] 0.7	[6] 0
National Association for Retarded Children	0.3	0.3	0	0.2	0.2	0	[1] 0.1	[1] 0.1	[1] 0
National Council on Alcoholism	[7] 0.2	[7] 0.2	[7] 0	[7] 0.2	[7] 0.2	[7] 0	[7] 0.2	[7] 0.2	[7] 0
National Council to Combat Blindness	0.5	0.4	1.5	0.6	0.5	1.7	0.4	0.4	1.2
National Cystic Fibrosis Research Foundation	1.5	1.6	0.5	[1] 1.3	[1] 1.4	[1] 0.3	[1] 0.4	[1] 0.4	[1] 0.2
National Foundation	15.7	17.0	0.8	14.4	15.1	5.5	20.4	20.0	25.7
National Foundation for Neuromuscular Diseases	0.1	0.2	0	0.4	0.5	0	0.4	0.4	0
National Hemophilia Foundation	0.1	0.1	0	(*)	(*)	0	(*)	(*)	0
National Kidney Foundation	[8] 0.6	[8] 0.7	[8] 0	[1] 0.5	[1] 0.6	[1] 0	[1] 0.3	[1] 0.4	[1] 0
National Multiple Sclerosis Society	1.4	1.3	2.1	1.2	1.2	1.4	1.0	0.8	2.4
National Osteopathic Foundation	0.2	0.2	0	0.2	0.2	0	0.2	0.2	0
National Paraplegia Foundation	(*)	(*)	0	(*)	(*)	0	0.1	0.1	0
National Parkinson Foundation	0.1	0.1	0	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.
National Society for Crippled Children and Adults	0.5	0.6	0	1.1	1.2	0	0.7	0.7	0.2
National Society for Prevention of Blindness	0.2	0.2	0	0.2	0.2	0	0.2	0.2	0
National Tuberculosis Association	2.8	3.0	1.0	[9] 3.2	[9] 3.4	[9] 1.4	[9] 2.5	[9] 2.6	[9] 0.6
Parkinson's Disease Foundation	0.1	0.1	0	0.5	0.6	0	n.i.e.	n.i.e.	n.i.e.
Planned Parenthood—World Population	[7] 0.1	[7] 0.2	[7] 0	[7] 0.2	[7] 0.2	[7] 0	[7] 0.2	[7] 0.2	[7] 0
Research to Prevent Blindness, Inc	3.5	3.8	0	0.2	0.2	0	n.i.e.	n.i.e.	n.i.e.
Seeing Eye, Inc	0.1	0.1	0.2	0.1	0.1	0.3	0	0	0
United Cerebral Palsy Associations, Inc	1.9	0.9	13.6	2.3	1.6	11.0	1.6	1.3	7.0
United Epilepsy Association, Inc.[10]	0.1	0.2	0	[1] 0.1	[1] 0.1	[1] 0	[1] 0.1	[1] 0.1	[1] 0
United Health Foundation, Inc	4.7	5.1	0	[11] 1.7	[11] 1.8	[11] 0	[11] 0	[11] 0	[11] 0

*Less than 0.05 percent.

Note.—See app. table 2 for footnotes.

Source: National Institutes of Health.

APPENDIX TABLE 3.—*Research Expenditures of Nine*[1] *Voluntary Health Agencies by Type of Support, 1957, 1960, 1963*

[Thousands of dollars]

Agency	Total research and training	Research support									
		Total	Intramural	Grants					Other		
				Total grants	Specific projects including equipment	Buildings and/or basic equipment	General support of institutions	General support of scientists	Total other	Conferences publications etc.	Administration of research programs
Total:											
1963	$40,508	$37,487	$785	$35,918	$23,818	$5,574	$4,258	$2,268	$782	$66	$716
1960	32,277	29,885	597	28,385	22,134	526	4,270	1,455	902	n.a.	n.a.
1957	29,053	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
American Cancer Society:											
1963	14,218	13,186	747	12,055	8,691	503	2,318	543	384	48	336
1960	12,089	11,675	576	10,705	8,794	----	1,585	326	394	----	----
1957	12,408	12,177	239	11,520	9,899	----	1,458	163	418	----	----
American Heart Association:											
1963	9,567	8,054	2	8,053	5,900	----	428	1,725	----	----	----
1960	9,053	7,641	21	7,620	5,887	----	604	1,129	----	----	----
1957	6,167	(2)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
National Foundation:											
1963	7,454	7,424	----	7,170	3,577	3,593	----	----	254	10	244
1960	5,378	5,220	----	4,846	3,846	500	500	----	374	----	----
1957	6,485	5,880	----	5,213	5,213	----	----	----	667	----	----
United Health Foundation (National Fund for Medical Education):											
1963	2,247	2,247	----	2,246	2,050	----	196	----	1	1	----
1960	638	638	----	638	----	----	638	----	----	----	----
1957	0	0	----	----	----	----	----	----	----	----	----
Muscular Dystrophy Associations of America, Inc.:											
1963	1,766	1,742	----	1,742	765	----	977	----	----	----	----
1960	1,711	1,691	----	1,691	990	----	701	----	----	----	----
1957	1,881	1,879	----	1,879	1,066	----	813	----	----	----	----
Research to Prevent Blindness:											
1963	1,655	1,655	36	1,601	----	1,465	136	----	16	----	16
1960	78	78	----	58	----	3	55	----	19	----	----
1957	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.	n.i.e.
National Tuberculosis Association:											
1963	1,329	1,292	----	1,164	1,013	9	142	----	127	7	120
1960	1,198	1,159	----	1,044	900	9	135	----	115	n.a.	n.a.
1957	786	773	----	696	600	6	90	----	77	n.a.	n.a.
Damon Runyon Memorial:											
1963	1,165	1,068	----	1,068	1,068	----	----	----	----	----	----
1960	1,332	1,197	----	1,197	1,197	----	----	----	----	----	----
1957	885	764	----	764	764	----	----	----	----	----	----
Arthritis Foundation:											
1963	1,107	819	----	819	754	4	61	----	----	----	----
1960	800	586	----	586	520	14	52	----	----	----	----
1957	441	309	----	309	293	10	6	----	----	----	----

[1] The 9 agencies which in 1963 spent more than $1 million for research and research training.
[2] Research expenditures estimated at approximately $5,200,000, but detail by type of support is not available.

NOTE.—N.i.e. denotes agency not in existence in the given year. Detail will not necessarily add to totals due to rounding.

Source: National Institutes of Health, derived from responses to survey and from agency annual reports.

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